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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,900	03/01/2002	Robert Douglas	049601-5001	1637

28977 7590 08/09/2005

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EXAMINER	
TSE, YOUNG TOI	
ART UNIT	**PAPER NUMBER**
2637	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,900	DOUGLAS ET AL.	
	Examiner	Art Unit	
	YOUNG T. TSE	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 3, 11, and 20 are objected to because of the following informalities: in claim 3 (lines 2 and 3) and claim 11 (line 9), "clock tunable filter" should be "clock-tunable filter"; in claim 20, line 1, "the filter" should be "the self-tuning filter". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4, 11 and15-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 4 and 11 recites the frequency multiplier is a phase-lock loop, however, as shown in Figure 7 and described in the specification, the frequency multiplier does not include a feedback loop or phase locked loop.

Claim 15 is a single means claim since only a self-tuning filter is claimed.

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See MPEP 2164.08(a).

Further, in claim 1, the claimed subject matter of "the input signal received a constant number of samples of samples previously in filter form" does not discuss in the specification since the input signal from the sensor is an analog signal.

Furthermore, the configuration of claim 17 does not correspond to the disclosure of Figure 1. For example, claim 17 recites the self-tuning filter further comprising a data acquisition device, however, the data acquisition device (112) is not part of the self-tuning filter.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5 and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, lines 1-2, the phrase "the data acquisition device" lacks antecedent basis, it appears to read "the acquisition unit", however, if this is the case, the claimed subject matter of claim 5 is already recited in claim 1.

In claim 18 (line 1), claim 19 (lines 1-2), and claim 20 (line 2), the phrases "the number of samples", "the ratio of sampling frequency to filter frequency", and "the signal" all lack antecedent basis, wherein "the signal" is unclear, the clocking or the filtered signal?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Soo.

Soo (U.S. Patent No. 4,987,373) discloses a phase lacked loop circuit in Figure 5 comprising a sampled-data loop filter (106) for filtering an error voltage signal from a sampled-data phase detector (104) and is controlled by a frequency acquisition circuit (112), the filtered signal is provided to a VCO (108) which provides a frequency output signal to a frequency divider (110) which controls the frequency of the sampled-data phase detector (104) and the frequency acquisition circuit (112); and a clock generator (102) generates reference clock or frequency to the sampled-data loop filter (106), the sampled-data phase detector (104) and the frequency acquisition circuit (112).

With respect to claims 15-16 and 18-19, the sampled-data loop filter corresponds to the self-tuning filter having a first input for receiving the signal of the frequency acquisition circuit (112), a second input for receiving the error voltage of the sampled-data phase detector (104), and an output for outputting the filter signal. Although Soo does not explicitly show or suggest that error voltage is derived from a sensor, it is simple the choice of design that a signal is generated by a sensor, or a wireless device of wire connection device.

Therefore, it would have been obvious to one of ordinary skill in the that an input signal provide to the input of Soo's loop filter could be generated by a sensor, for example, an infrared signal instead of a wire connection signal in order to use in optical communication.

With respect to claim 17, the frequency acquisition circuit (112) performs the same operation as the data acquisition device.

With respect to claim 20, the Loop filter (106) is a low pass filter.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-6, 9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Podolak et al..

Podolak et al. (U.S. Patent No. 4,763,207) discloses a communication system in Fig. 1 including an encoding circuit for encoding an analog signal in digital form and a decoding circuit for decoding the encoded signal.

Referring to Fig. 1, the encoding circuit includes at least a real time analyzer (20) for analyzing an input analog signal; a sampling rate selector (24) for sampling the analyzed signal to provide a plurality of sampling rates; and a low pass filter (28) for filtering the high frequency of the input analog signal based on a selected sampling rate of the plurality of the sampling rates provided by the sampling rate selector (24) to provide a frequency control signal to an A/D converter (30). See column 4, lines 8-24, column 6, lines 29-35, and column 7, lines 51-62.

The detailed embodiment of the coding circuit is shown in Fig. 2.

With respect to claims 1-2 and 12, the real time analyzer (20) and the sampling rate selector (24) receives the input analog signal and provides the plurality of the sampling rates having different clocking signals; wherein the low pass filter (28)

corresponds to the clock-tunable filter and provides the frequency control signal of the input analog signal to the A/D converter (30) based on a selected sampling rate of the plurality of the sampling rates provided by the sampling rate selector (24). Although Podolak does not explicitly show or suggest a data acquisition unit for generating the input, it is the choice of design that an input signal could be derived from a data acquisition unit or other units which depends on the requirement of the invention.

With respect to claims 3 and 13, as shown in Fig. 2, the selected sampling rate is clocked by a 15 clock frequency dividers (88).

With respect to claims 4 and 11, in general, a multiplier is part of a phase locked loop circuit. Therefore, it is obvious to one of ordinary skill in the art that a clock or frequency generated from a multiplier is also from a phase locked loop circuit.

With respect to claim 5, the input analog signal is provided from an internal or external unit, for example, can be a data acquisition unit as recited in claim 5.

With respect to claims 6, 9, and 14, the selected sampling rate is selected from one of the plurality of sampling rates. Therefore, the sampling frequency is variable.

11. Claims 7-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Podolak et al. in view of Brandenburg et al.

Although Podolak et al. does nor explicitly show or suggest that the input analog signal input to the controllable filter circuit or self-tuning filter is a signal originating at a sensor as recited in claim 7; the sensor is a pressure sensor as recited in claim 8; and the sampling frequency varies as a function of a degree of rotation of a shift as recited in claim 10.

Brandenburg et al. (EP 0 952 335 A1) discloses a sensing apparatus mounts near a rotor (30) of a combined starter/alternator assembly (18). In Fig. 6, one of the input signal input to the controllable filter circuit (46) is from a crankshaft position sensor (36), another input signal is from a camshaft cylinder identification sensor (48) through an adjustment multiplier (50) that accounts for the difference in rotational speed between a crankshaft and a camshaft. See column 4, lines 19-57.

Therefore, it would have been obvious to one of ordinary skill in the art that the controllable filter circuit is capable of used in Podolaks' encoding circuit is also capable of used in other circuits, such as a sensing apparatus taught by Brandenburg in order to filter the frequency of a sensor signal through a sensor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Thursday and alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The Central FAX Number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Primary Examiner
Art Unit 2637